AMENDMENTS TO THE CLAIMS

1. (Original) A method of forming piezoelectric tubes, the method including:

forming a suspension of ceramic particles in a fluid medium;

positioning a rod in the fluid medium;

depositing particles on the rod using electrophoresis; and

heat-treating the deposited particles to form a piezoelectric tube.

2. (Original) A method according to claim 1, the method of depositing the particles further including:

positioning the rod in a container containing the suspension;

connecting the rod to a first terminal of a power supply;

connecting an electrode to a second terminal of the power supply, the electrode being in contact with the fluid medium; and

using the power supply to apply a predetermined DC voltage to the electrode and the rod to thereby cause at least some of the particles to be deposited on the rod.

3. (Original) A method according to claim 2, the container being a conductive container adapted to act as the electrode.

4. (Original) A method according to claim 3, the container being formed from at least one of stainless steel, copper, and another metal.

5. (Original) A method according to claim 3, the container being formed from at least one of glass and plastic and the container being coated with at least one conductive layer.

6. (Currently Amended) A method according to claim 1, the method of heat-treating the deposited particles further including:

heating the deposited particles to a first predetermined temperature to thereby solidify the particles to a surface of the rod and burn the rod, to thereby leave a tube of solidified particles, the tube being closed at one end; and

heating the tube to a second predetermined temperature to thereby sinter the tube to form a dense ceramic tube.

7. (Original) A method according to claim 6, the method further including cutting off the closed end of the tube.

8. (Original) A method according to claim 6, the second predetermined temperature being higher than the first predetermined temperature.

9. (Original) A method according to claim 6, the first predetermined temperature being between 500 and 1200°C.

10. (Original) A method according to claim 6, the second predetermined temperature being between 850 and 1300°C.

11. (Original) A method according to claim 1, the rod being formed from graphite.

12. (Original) A method according to claim 6, the rod being formed from at least one of plastic and another material that can be burnt off at the first predetermined temperature, the rod being coated with at least one conductive layer.

13. (Original) A method according to claim 1, the method further including using a magnetic stirrer to inhibit sedimentation of the particles in the suspension.

14. (Original) A method according to claim 1, the method of forming the suspension further including:

dispersing the particles into a solvent to form the suspension; and

adjusting the pH value of said suspension to a predetermined pH value.

15. (Original) A method according to claim 14, the solvent being an organic solvent.

16. (Original) A method according to claim 15, the solvent at least one of ethanol and acetone.

17. (Original) A method according to claim 14, the solvent being water.

18. (Original) A method according to claim 14, the method of dispersing the particles including dispersing the particles ultrasonically.

19. (Original) A method according to claim 14, the method including adding a stabilizer to the suspension.

20. (Currently Amended) A method according to claim ~~14~~ 19, the stabilizer being ether glycol.

21. (Original) A method according to claim 1, the particles comprising at least one of:

lead zirconate titanate;

doped lead zirconate titanate;

$BaTiO_3$;

$0.95Pb(Zr_{0.52}Ti_{0.48})O_3{\cdot}0.03BiFeO_3{\cdot}0.02Ba(Cu_{0.5}W_{0.5})O_3{+}0.5wt\%MnO_2$; and

other piezoelectric particles.

22. (Original) A method according to claim 1, the method further including:

applying metallic paste to the inner and outer surfaces of the piezoelectric tube; and,

poling the piezoelectric tube to thereby form a transducer.

23. (Original) A method according to claim 22, the poling conditions including the application of an electrical field in the region of 2 ~ 4 kV/mm, for between 20 ~ 120 minutes duration and at temperature 100 to 150 °C.

24. (Original) A method according to claim 1, the piezoelectric tube being a double layered piezoelectric tube, the method further including:

applying a metallic paste to an outer surface of a first layer formed from the heat-treated deposited particles to form an intermediate electrode;

depositing further particles on the rod using electrophoresis to form a second layer; and,

heat-treating the deposited layers to form the double layer piezoelectric tube.

25. (Original) A method according to claim 1, the piezoelectric tube being a multi-layered piezoelectric tube, the method further including:

applying a metallic paste to an outer surface of a layer formed from the heat-treated deposited particles to form an intermediate electrode;

depositing further particles on the rod using electrophoresis to form a further layer;

heat-treating the deposited layers; and,

repeating the steps to form a multi-layered piezoelectric tube.

26. (Withdrawn) An apparatus for forming piezoelectric tubes, the apparatus including:

a container for containing a suspension of ceramic particles in a fluid medium;

a rod in contact with the fluid medium;

an electrode in contact with the fluid medium;

a power supply adapted to apply a predetermine voltage to the rod and the electrode to thereby deposit at least some of the particles on the rod in use; and

a heat source for heat-treating the deposited particles to form a piezoelectric tube.

27. (Withdrawn) The apparatus according to claim 26, the container being a conductive container adapted to act as the electrode.

28. (Withdrawn) The apparatus according to claim 27, the container being formed from at least one of stainless steel, copper, and another metal.

29. (Withdrawn) The apparatus according to claim 28, the container being formed from at least one of glass and plastic, the container being coated with at least one conductive layer.

30. (Withdrawn) The apparatus according to claim 26, the heat source being adapted to:

heat the deposited particles to a first predetermined temperature to thereby:

solidify the particles to a surface of the rod; and,

burn off the rod, to thereby leave a tube of solidified particles, the tube being closed at one end; and

heat the tube to a second predetermined to thereby sinter the tube to form a dense ceramic tube.

31. (Withdrawn) The apparatus according to claim 30, the second predetermined temperature being higher than the first predetermined temperature.

32. (Withdrawn) The apparatus according to claim 30, the first predetermined temperature being between 500 and 1200°C.

33. (Withdrawn) The apparatus according to claim 30, the second predetermined temperature being between 850 and 1300°C.

34. (Withdrawn) The apparatus according to claim 26, the rod being formed from graphite.

35. (Withdrawn) The apparatus according to claim 26, the rod being formed from at least one of plastic and another material that can be burnt off at the first predetermined temperature, the rod being coated with at least one conductive layer.

36. (Withdrawn) The apparatus according to claim 26, the apparatus further including a magnetic stirrer for stirring the fluid medium to inhibit sedimentation of the particles in the suspension.